RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/501,071A
Source: IFW16
Date Processed by STIC: 02/06/2007

ENTERED

IFW16

RAW SEQUENCE LISTING DATE: 02/06/2007
PATENT APPLICATION: US/10/501,071A TIME: 10:09:19

Input Set : A:\Sequence Listing.ST25.txt
Output Set: N:\CRF4\02062007\J501071A.raw

<110> APPLICANT: University of Newcastle Upon Tyne
<120> TITLE OF INVENTION: Fusion Proteins
<130> FILE REFERENCE: P69705US0
<140> CURRENT APPLICATION NUMBER: US 10/501,071A
<141> CURRENT FILING DATE: 2005-02-14
<150> PRIOR APPLICATION NUMBER: GB 0200689.8
<151> PRIOR FILING DATE: 2002-01-10
<160> NUMBER OF SEQ ID NOS: 62
<170> SOFTWARE: PatentIn version 3.1
<210> SEQ ID NO: 1
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Ala3-His6 tail
<400> SEQUENCE: 1
Ala Ala Ala His His His His His His
1 5

(p8-6)

<210> SEQ ID NO: 2
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Escherichia coli
<400> SEQUENCE: 2
Met Asn Met Lys Lys Leu Ala Thr Leu Val Ser Ala Val Ala Leu Ser
1 5 10 15
Ala Thr Val Ser Ala Asn Ala Met Ala
20 25
<210> SEQ ID NO: 3
<211> LENGTH: 5
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Cleavage site for enterokinase
<400> SEQUENCE: 3
Asp Asp Asp Asp Lys
1 5
<210> SEQ ID NO: 4
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Cleavage site for thrombin
<400> SEQUENCE: 4

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106 Leu Val Pro Arg
107 1
110 <210> SEQ ID NO: 5
112 <211> LENGTH: 4
114 <212> TYPE: PRT
116 <213> ORGANISM: Artificial Sequence
120 <220> FEATURE:
122 <223> OTHER INFORMATION: Cleavage site for factor Xa
124 <400> SEQUENCE: 5
126 Ile Glu Gly Arg
127 1
130 <210> SEQ ID NO: 6
132 <211> LENGTH: 4
134 <212> TYPE: PRT
136 <213> ORGANISM: Artificial Sequence
140 <220> FEATURE:
142 <223> OTHER INFORMATION: 4xHis tag
144 <400> SEQUENCE: 6
146 His His His His
147 1
150 <210> SEQ ID NO: 7
152 <211> LENGTH: 5
154 <212> TYPE: PRT
156 <213> ORGANISM: Artificial Sequence
160 <220> FEATURE:
162 <223> OTHER INFORMATION: 5xHis tag
164 <400> SEQUENCE: 7
166 His His His His His
167 1 5
170 <210> SEQ ID NO: 8
172 <211> LENGTH: 6
174 <212> TYPE: PRT
176 <213> ORGANISM: Artificial Sequence
180 <220> FEATURE:
182 <223> OTHER INFORMATION: 6xHis tag
184 <400> SEQUENCE: 8
186 His His His His His His
187 1 5
190 <210> SEQ ID NO: 9
192 <211> LENGTH: 7
194 <212> TYPE: PRT
196 <213> ORGANISM: Artificial Sequence
200 <220> FEATURE:
202 <223> OTHER INFORMATION: 7xHis tag
204 <400> SEQUENCE: 9
206 His His His His His His His
207 1 5
210 <210> SEQ ID NO: 10
212 <211> LENGTH: 8

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Input Set : A:\Sequence Listing.ST25.txt
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214 <212> TYPE: PRT
216 <213> ORGANISM: Artificial Sequence
220 <220> FEATURE:
222 <223> OTHER INFORMATION: 8xHis tag
224 <400> SEQUENCE: 10
226 His His His His His His His His
227 1 5
230 <210> SEQ ID NO: 11
232 <211> LENGTH: 9
234 <212> TYPE: PRT
236 <213> ORGANISM: Artificial Sequence
240 <220> FEATURE:
242 <223> OTHER INFORMATION: 9xHis tag
244 <400> SEQUENCE: 11
246 His His His His His His His His His
247 1 5
250 <210> SEQ ID NO: 12
252 <211> LENGTH: 10
254 <212> TYPE: PRT
256 <213> ORGANISM: Artificial Sequence
260 <220> FEATURE:
262 <223> OTHER INFORMATION: 10xHis tag
264 <400> SEQUENCE: 12
266 His His His His His His His His His His
267 1 5 10
270 <210> SEQ ID NO: 13
272 <211> LENGTH: 93
274 <212> TYPE: PRT
276 <213> ORGANISM: Escherichia coli
280 <400> SEQUENCE: 13
282 Asn Asn Gly Ala Ser Gly Ala Asp Ile Asn Asn Tyr Ala Gly Gln Ile
283 1 5 10 15
286 Lys Ser Ala Ile Glu Ser Lys Phe Tyr Asp Ala Ser Ser Tyr Ala Gly
287 20 25 30
290 Lys Thr Cys Thr Leu Arg Ile Lys Leu Ala Pro Asp Gly Met Leu Leu
291 35 40 45
294 Asp Ile Lys Pro Glu Gly Gly Asp Pro Ala Leu Cys Gln Ala Ala Leu
295 50 55 60
298 Ala Ala Ala Lys Leu Ala Lys Ile Pro Lys Pro Pro Ser Gln Ala Val
299 65 70 75 80
302 Tyr Glu Val Phe Lys Asn Ala Pro Leu Asp Phe Lys Pro
303 85 90
306 <210> SEQ ID NO: 14
308 <211> LENGTH: 348
310 <212> TYPE: PRT
312 <213> ORGANISM: Artificial Sequence
316 <220> FEATURE:
318 <223> OTHER INFORMATION: TolA-BCL fusion protein
320 <400> SEQUENCE: 14

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```
322 Met His His His His His His Ser Ser Asn Asn Gly Ala Ser Gly Ala
323 1               5                  10                  15
326 Asp Ile Asn Asn Tyr Ala Gly Gln Ile Lys Ser Ala Ile Glu Ser Lys
327             20                  25                  30
330 Phe Tyr Asp Ala Ser Ser Tyr Ala Gly Lys Thr Cys Thr Leu Arg Ile
331         35                  40                  45
334 Lys Leu Ala Pro Asp Gly Met Leu Leu Asp Ile Lys Pro Glu Gly Gly
335     50                  55                  60
338 Asp Pro Ala Leu Cys Gln Ala Ala Leu Ala Ala Ala Lys Leu Ala Lys
339 65                  70                  75                  80
342 Ile Pro Lys Pro Pro Ser Gln Ala Val Tyr Glu Val Phe Lys Asn Ala
343                 85                  90                  95
346 Pro Leu Asp Phe Lys Pro Gly Gly Gly Ser Gly Ser Leu Val Pro Arg
347             100                 105                 110
350 Gly Ser Arg Pro Ser Gln Ser Asn Arg Glu Leu Val Val Asp Phe Leu
351         115                 120                 125
354 Ser Tyr Lys Leu Ser Gln Lys Gly Tyr Ser Trp Ser Gln Phe Ser Asp
355     130                 135                 140
358 Val Glu Glu Asn Arg Thr Glu Ala Pro Glu Gly Thr Glu Ser Glu Met
359 145                 150                 155                 160
362 Glu Thr Pro Ser Ala Ile Asn Gly Asn Pro Ser Trp His Leu Ala Asp
363                 165                 170                 175
366 Ser Pro Ala Val Asn Gly Ala Thr Ala His Ser Ser Ser Leu Asp Ala
367             180                 185                 190
370 Arg Glu Val Ile Pro Met Ala Ala Val Lys Gln Ala Leu Arg Glu Ala
371         195                 200                 205
374 Gly Asp Glu Phe Glu Leu Arg Tyr Arg Arg Ala Phe Ser Asp Leu Thr
375     210                 215                 220
378 Ser Gln Leu His Ile Thr Pro Gly Thr Ala Tyr Gln Ser Phe Glu Gln
379 225                 230                 235                 240
382 Val Val Asn Glu Leu Phe Arg Asp Gly Val Asn Trp Gly Arg Ile Val
383                 245                 250                 255
386 Ala Phe Phe Ser Phe Gly Gly Ala Leu Cys Val Glu Ser Val Asp Lys
387             260                 265                 270
390 Glu Met Gln Val Leu Val Ser Arg Ile Ala Ala Trp Met Ala Thr Tyr
391         275                 280                 285
394 Leu Asn Asp His Leu Glu Pro Trp Ile Gln Glu Asn Gly Gly Trp Asp
395     290                 295                 300
398 Thr Phe Val Glu Leu Tyr Gly Asn Asn Ala Ala Ala Glu Ser Arg Lys
399 305                 310                 315                 320
402 Gly Gln Glu Arg Phe Asn Arg Trp Phe Leu Thr Gly Met Thr Val Ala
403                 325                 330                 335
406 Gly Val Val Leu Leu Gly Ser Leu Phe Ser Arg Lys
407             340                 345
410 <210> SEQ ID NO: 15
412 <211> LENGTH: 236
414 <212> TYPE: PRT
416 <213> ORGANISM: Artificial Sequence
420 <220> FEATURE:
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Input Set : **A:\Sequence Listing.ST25.txt**
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422 <223> OTHER INFORMATION: TolA-BCL fusion protein after thrombin cleavage
424 <400> SEQUENCE: 15
426 Gly Ser Arg Pro Ser Gln Ser Asn Arg Glu Leu Val Val Asp Phe Leu
427 1 5 10 15
430 Ser Tyr Lys Leu Ser Gln Lys Gly Tyr Ser Trp Ser Gln Phe Ser Asp
431 20 25 30
434 Val Glu Glu Asn Arg Thr Glu Ala Pro Glu Gly Thr Glu Ser Glu Met
435 35 40 45
438 Glu Thr Pro Ser Ala Ile Asn Gly Asn Pro Ser Trp His Leu Ala Asp
439 50 55 60
442 Ser Pro Ala Val Asn Gly Ala Thr Ala His Ser Ser Ser Leu Asp Ala
443 65 70 75 80
446 Arg Glu Val Ile Pro Met Ala Ala Val Lys Gln Ala Leu Arg Glu Ala
447 85 90 95
450 Gly Asp Glu Phe Glu Leu Arg Tyr Arg Arg Ala Phe Ser Asp Leu Thr
451 100 105 110
454 Ser Gln Leu His Ile Thr Pro Gly Thr Ala Tyr Gln Ser Phe Glu Gln
455 115 120 125
458 Val Val Asn Glu Leu Phe Arg Asp Gly Val Asn Trp Gly Arg Ile Val
459 130 135 140
462 Ala Phe Phe Ser Phe Gly Gly Ala Leu Cys Val Glu Ser Val Asp Lys
463 145 150 155 160
466 Glu Met Gln Val Leu Val Ser Arg Ile Ala Ala Trp Met Ala Thr Tyr
467 165 170 175
470 Leu Asn Asp His Leu Glu Pro Trp Ile Gln Glu Asn Gly Gly Trp Asp
471 180 185 190
474 Thr Phe Val Glu Leu Tyr Gly Asn Asn Ala Ala Ala Glu Ser Arg Lys
475 195 200 205
478 Gly Gln Glu Arg Phe Asn Arg Trp Phe Leu Thr Gly Met Thr Val Ala
479 210 215 220
482 Gly Val Val Leu Leu Gly Ser Leu Phe Ser Arg Lys
483 225 230 235
486 <210> SEQ ID NO: 16
488 <211> LENGTH: 115
490 <212> TYPE: PRT
492 <213> ORGANISM: Artificial Sequence
496 <220> FEATURE:
498 <223> OTHER INFORMATION: Tagged TolAIII region of pTol vectors
500 <220> FEATURE:
502 <221> NAME/KEY: MISC_FEATURE
504 <222> LOCATION: (107)..(111)
506 <223> OTHER INFORMATION: Xaa residues represent cleavage sites DDDDK (SEQ ID NO: 3), LVPR
507 (SEQ ID NO: 4; no Xaa at position 111) or IEGR (SEQ ID NO: 5; no
508 Xaa at position 111)
512 <400> SEQUENCE: 16
514 Met His His His His His His Ser Ser Asn Asn Gly Ala Ser Gly Ala
515 1 5 10 15
518 Asp Ile Asn Asn Tyr Ala Gly Gln Ile Lys Ser Ala Ile Glu Ser Lys
519 20 25 30

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 02/06/2007
PATENT APPLICATION: **US/10/501,071A** TIME: 10:09:20

Input Set : **A:\Sequence Listing.ST25.txt**
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Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:16; Xaa Pos. 107,108,109,110,111
Seq#:22; Xaa Pos. 14,15
Seq#:23; Xaa Pos. 13,14
Seq#:24; Xaa Pos. 13,14

VERIFICATION SUMMARY DATE: 02/06/2007
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Input Set : **A:\Sequence Listing.ST25.txt**
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L:538 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:96
L:666 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0
L:700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:730 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0